Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

In the Matter of	
Amending the Definition of Interconnected VoIP) Service in Section 9.3 of the Commission's Rules	GN Docket No. 11-117
Wireless E911 Location Accuracy Requirements)	PS Docket No. 07-114
E911 Requirements for IP-Enabled Service Providers	WC Docket No. 05-196

COMMENTS OF CTIA - THE WIRELESS ASSOCIATION®

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COMMENTS OF CTIA - THE WIRELESS ASSOCIATION®

I. INTRODUCTION AND SUMMARY

CTIA – The Wireless Association® ("CTIA")¹ respectfully submits these comments in response to the Commission's Notice of Proposed Rulemaking, Third Report and Order, and Second Further Notice of Proposed Rulemaking ("Further Notice") proposing "measures to improve 911 availability and location determination for users of interconnected Voice over Internet Protocol ("VoIP") services."²

CTIA takes the opportunity in these comments to promote a light touch approach to the Enhanced 911 ("E911") initiatives proposed in the *Further Notice* and encourages the Commission to provide the industry with the flexibility to develop the most efficient standards to advance the goal of enhanced location accuracy. The Commission should allow the

¹ CTIA – The Wireless Association[®] is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service ("CMRS") providers and manufacturers, including cellular, Advanced Wireless Service, 700 MHz, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission's Rules, Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, Notice of Proposed Rulemaking, Third Report and Order, and Second Further Notice of Proposed Rulemaking, FCC 11-107 (2011) ("Further Notice").

Communications Security, Reliability and Interoperability Council ("CSRIC") to develop industry best practices for indoor location accuracy testing and Wi-Fi positioning, as these efforts involve complicated technical issues that are best addressed by a group of interested stakeholders with the necessary technical knowledge. CTIA also urges the Commission not to adopt mandates with regard to information sharing between broadband service providers and VoIP providers. Instead, the Commission should encourage best practices and commercial agreements between these entities. CTIA also stresses that the important privacy issues implicated by the provision of E911 should be left to the industry and that the Commission need not and should not consider extending Section 222 privacy obligations to broadband providers in this proceeding.

In these comments, CTIA also encourages the Commission to take an active role in helping ensure that wireless service providers and equipment manufacturers are protected from liability under any regulations adopted, and that liability protections endure through the introduction of new technologies and services. Finally, CTIA suggests that the Commission's proposal to develop operational benchmarks to assist consumers in evaluating E911 capabilities, while well-intended, is likely not feasible in the near term due to the dynamic nature of the wireless ecosystem.

II. THE COMMISSION SHOULD ALLOW THE CSRIC TO DEVELOP INDUSTRY BEST PRACTICES FOR INDOOR LOCATION ACCURACY TESTING AND WI-FI POSITIONING.

CTIA shares the Commission's desire to develop reliable and accurate indoor technical solutions and testing methodologies. CTIA takes this opportunity, however, to note the numerous complexities of indoor location accuracy testing and solutions, and recommends that the Commission promote industry-developed standards in this area. For this reason, CTIA supports the Commission's proposal to have CSRIC address indoor testing issues, and also

believes that CSRIC should determine recommendations for industry best practices, if feasible, regarding Wi-Fi positioning.

CTIA believes that the Commission should refrain from adopting an indoor testing requirement in light of the documented and numerous challenges associated with indoor location accuracy testing. The ATIS Emergency Services Interconnection Forum ("ESIF") has studied this issue and noted the many complexities of indoor location accuracy testing. For example, ATIS correctly highlighted that it is often difficult to obtain access to certain indoor testing environments, residential buildings in particular.³ Numerous wireless carriers have affirmed this finding,⁴ with T-Mobile noting that "[g]etting widespread access to indoor facilities is extremely difficult and is compounded by privacy and security concerns."⁵ Once a test has taken place, "results cannot be considered valid unless the users of the data are assured that consistent, accurate ground truth has been established for each site in the test plan."⁶ And "the establishment of an accurate ground truth is often challenging due to blockage of GPS signals and complexity of alternative ground truth measurement methods."⁷

In light of the difficulty, complexity, and cost of indoor testing, CTIA supports the Commission's decision to refer the indoor testing issue to CSRIC for further development of

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Alliance for Telecommunications Industry Solutions, *ATIS Standard on Approaches to Wireless E9-1-1 Indoor Location Performance Testing*, ATIS-0500013, at 10 (2010) ("ATIS Indoor Testing Standard").

See, e.g., Reply Comments of Sprint Nextel Corporation, PS Docket No. 07-114, at 3 (Feb. 18, 2011); Comments of AT&T Inc., PS Docket No. 07-114, at 10 (Jan. 19, 2011).

⁵ Comments of T-Mobile USA, Inc., 07-114, at 22 (Jan. 19, 2011) ("T-Mobile E911 Comments").

ATIS Indoor Testing Standard at 2 (2010). ATIS defines "ground truth" as "[a] geographic location specified in latitude and longitude for the actual location on a map for an identified location." *Id.* at 3.

⁷ *Id.* at 2.

technical recommendations.⁸ CTIA also suggests that any resulting recommendations provide flexibility in test procedures, without any strict standards or requirements mandated by the Commission. Rather, it should be left to the industry and Public Safety community to develop guidelines that can be effectively implemented and rapidly updated to reflect changing technologies.

The Commission also has sought comment on the utility of Wi-Fi positioning to support indoor location accuracy. CTIA submits that Wi-Fi positioning presents challenges similar to those present in developing indoor location accuracy solutions. As T-Mobile has observed, this method "only works in urban and dense suburban areas, and only with phones that have WiFireceive capability." T-Mobile also correctly noted that "current E911 control plane interface standards do not support the use of WiFi Proximity location estimates for E911 purposes, and developing and maintaining the required database to support this method is operationally intensive and costly." Verizon Wireless has reported that it does not use Wi-Fi positioning for 9-1-1 call location "given concerns for the accuracy and reliability of information in vendors' databases." The challenges highlighted by T-Mobile and Verizon Wireless suggest that further steps must be taken by the industry to investigate the feasibility of standards and best practices for Wi-Fi positioning. CTIA believes that CSRIC is well-suited to investigate this issue.

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Further Notice at \P 88.

⁹ *Id.* at ¶¶ 89, 93.

T-Mobile E911 Comments at 15.

¹¹ *Id.*

Letter from Nneka Ezenwa, Verizon to Marlene H. Dortch, Federal Communications Commission, PS Docket No. 07-114, at 2 (May 18, 2011).

III. BROADBAND SERVICE PROVIDERS AND OVER-THE-TOP VOIP PROVIDERS CAN COORDINATE TO PROVIDE LOCATION INFORMATION FREE FROM FCC-ESTABLISHED "GOVERNING PRINCIPLES."

In the *Further Notice*, the Commission has proposed to adopt "governing principles" under which broadband providers would provide location information to particular parties in connection with 9-1-1 calls.¹³ For example, the broadband provider might be obligated to provide access point location information to: (1) the end user, (2) the over-the-top VoIP provider, or (3) the PSAP.¹⁴ The Commission similarly has proposed that VoIP providers either provide automatic location information ("ALI") directly or "support the provision of access point location information by the broadband provider."¹⁵ CTIA is concerned that the adoption of regulation in this area, even if only in the form of "guiding principles," could restrain innovative technologies and agreements by VoIP providers and broadband providers. Just as it has in connection with other proposed E911 initiatives, CTIA encourages the Commission to allow industry stakeholders to develop best practices free from the constraints of regulation.

As noted above, the Commission has proposed to adopt general principles with regard to information sharing between VoIP providers and underlying broadband providers; however, CTIA has major concerns that regulation in this area could have the unintended consequence of unduly constraining broadband and VoIP providers. The Commission's proposal is likely to lead to the development of a single standard for compliance, which is unnecessary and inadvisable — particularly in a dynamic technological environment. CTIA believes that the Commission would

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Further Notice at \P 72.

¹⁴ *Id*.

¹⁵ *Id.*

best enable information sharing among VoIP providers and broadband providers by encouraging industry best practices and commercial agreements.

Furthermore, the Commission has no clear idea of precisely the types of innovation that may (and will) occur in the future that would not be appropriately covered by any regulations it adopts in the near term. Should the Commission instead move forward with adopting standards for information-sharing, it could inadvertently restrain flexible agreement-based models that can result in innovative new services and technologies for obtaining location information. This reality underscores the need for caution before taking this approach.

CTIA further notes the questionable nature of the Commission's legal authority to regulate in this area. As detailed further below, the Commission deliberately acted to classify mobile broadband as an information service subject to minimal regulation, finding that doing so "promotes our goal of ubiquitous availability of broadband to all Americans." The regime proposed by the Commission, however, would impose considerable additional burdens on mobile broadband providers.

Finally, as a practical matter, as the Commission moves to extend E911 location requirements to wireless broadband and VoIP entities, it must carefully consider the severed link between the licensed CMRS service provider and the LBS capabilities of not just the VoIP provider, but also end-user devices. For example, Wi-Fi enabled tablets, game controllers, and MP3 players with a microphone or auxiliary input now can access the Internet and send and receive Public Switched Telephone Network messages (and voice) thanks to over-the-top providers that can map IP addresses to temporary, dynamically-assigned POTS numbers. In

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Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks, Declaratory Ruling, 22 FCC Rcd 5901, ¶ 2 (2007) ("Wireless Broadband Declaratory Ruling").

contrast to devices operating with licensee control and coordination at the edge of a CMRS provider's network, in these instances, the broadband provider has no control – much less visibility – over the end-user devices accessing their network over unlicensed spectrum, and even less control over the features and capabilities of those devices. The Moreover, unlike circuit-switched CMRS providers' use of Pseudo Automatic Number Identifications ("pANIs") to send location information to PSAPs, there exist many protocols – both open and proprietary – for IP-based location-based services applications sending latitude/longitude data. Before proceeding with regulations, the Commission should recognize the complexities created by this new age of IP-enabled end-user devices, open application markets and third party services.

CTIA believes that, for the reasons stated above, the preferable approach is for the Commission to allow the industry to develop best practices for providing E911 location accuracy information to VoIP providers, rather than dictating a single standard or requirement; such an approach to these emerging services also would avoid the distraction of an extended legal debate regarding the scope of the Commission's legal authority.

IV. THE COMMISSION NEED NOT – AND SHOULD NOT – CONSIDER EXTENDING SECTION 222 PRIVACY OBLIGATIONS TO BROADBAND PROVIDERS IN THIS PROCEEDING.

In the *Further Notice*, the Commission correctly notes that any information sharing between broadband providers and VoIP providers regarding users' location information raises significant privacy concerns. The Commission has asked whether it can require broadband providers to maintain the confidentiality of location information (except as consistent with laws

tablets, netbooks, etc.").

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See, e.g., Press Release, Neustar Launches Text Everywhere Service Enabling People to Text on Any Device, Oct. 3, 2011 available at http://www.neustar.biz/about-neustar/press-room/neustar-announcements/2011/neustar-launches-text-everywhere-service-enabling-people-to-text-on-any-device (announcing service that allows consumers and businesses to "send and receive text messages from network-connected devices including televisions, IP desk phones,

concerning customer proprietary network information ("CPNI")) in connection with the provision of location information to VoIP providers. ¹⁸ CTIA and its members are committed to protecting the privacy of wireless users, but CTIA believes that the Commission's proposal is not necessary and raises issues beyond the scope of this proceeding.

In proposing its framework for the sharing of private user information between broadband providers and VoIP providers, the Commission is essentially attempting to solve a problem already addressed by the New and Emerging Technologies 911 Improvement Act of 2008 ("NET 911 Improvement Act"). As the Commission correctly noted when it adopted regulations implementing the NET 911 Improvement Act, these rules were crafted to "ensure that interconnected VoIP providers have access to any and all capabilities they need to satisfy [E911 requirements]." As such, CTIA believes there is no need to adopt a framework for information sharing between VoIP providers and the broadband providers that enable VoIP services, particularly in the context of customer privacy.

In the *Further Notice*, the Commission has proposed to extend its CPNI requirements to broadband providers using ancillary authority under Section 222 of the Communications Act.²⁰ As has been acknowledged in previous proceedings, the question of whether the Commission may extend a Title II regulation to mobile broadband providers has significantly broader implications than those raised by this proceeding.²¹ CTIA strongly believes that the instant proceeding is an inappropriate forum for discussion of this issue.

Further Notice at \P 76.

Implementation of the NET 911 Improvement Act of 2008, Report and Order, 23 FCC Rcd 15884, at ¶ 1 (2008).

Further Notice at \P 76.

See, e.g., Wireless Broadband Declaratory Ruling at ¶ 41 ("Concluding that mobile wireless broadband Internet access service, as an information service, should not be included in

Rather than adopt regulations in this area, CTIA believes that the Commission should continue allowing the industry to address these privacy issues. As stated above, CTIA and its member companies make protecting the private information of their customers a top priority, and any requirement involving disclosure of customer information raises serious concerns. Indeed, CTIA has taken a leading role in protecting the privacy of users of location-based services. CTIA's "Best Practices and Guidelines for Location-Based Services" aim to maintain user control over their location information.²² Specifically, under the guidelines, location-based services providers must ensure that users receive meaningful notice about how location information will be used, disclosed, and protected and must ensure that users consent to the use or disclosure of location information.²³ By allowing the industry to develop and update best practices for protecting customer location information, the Commission will encourage further innovative solutions for the protection of consumer privacy.

V. THE COMMISSION MUST ENSURE THAT WIRELESS SERVICE PROVIDERS AND EQUIPMENT MANUFACTURERS ARE PROTECTED FROM LIABILITY UNDER REGULATIONS REGARDING INTERCONNECTED VOIP.

In the *Further Notice*, the Commission contemplates E911 requirements that would involve new or modified interactions among broadband providers, VoIP providers, and equipment manufacturers. These proposed regulations raise considerable concerns regarding the liability of wireless broadband providers and equipment manufacturers. Accordingly, the

the CMRS definition or subject to Title II common carrier obligations applicable to telecommunications service providers is most consistent with Congressional intent to maintain a regime in which information service providers are not subject to Title II regulations as common carriers.").

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²² CTIA—The Wireless Association®, *Best Practices and Guidelines for Location-Based Services*, Version 2.0 (2010), *available at* http://files.ctia.org/pdf/CTIA_LBS_Best_Practices_Adopted_03_10.pdf.

²³ *Id.* at 1.

Commission must provide certainty that sufficient liability protection will be afforded in connection with actions taken to facilitate E911 services for users of VoIP technologies. CTIA takes this opportunity to once again voice its support for uniform liability protection for service providers and manufacturers in connections with their provision of E911 services.

In the *Further Notice*, the Commission has outlined complex scenarios in which numerous parties would be involved in the provision of E911 services. For example, the Commission envisioned a situation where a potential 9-1-1 caller would receive interconnected VoIP service from one provider and broadband internet connectivity from another provider.²⁴ Indeed, a 9-1-1 call could be attempted via an application on a mobile phone that is connected over Wi-Fi or mobile broadband networks. Such a mechanism would involve complicated interactions among VoIP providers, wireless broadband providers, and equipment manufacturers, and these parties may or may not be protected under existing sources of liability protection under federal law. As CTIA noted in the Commission's Next Generation 9-1-1 proceeding, in this age of open application markets and third party services provided over wireless broadband networks, it is critical that the Commission and lawmakers recognize that it would often be inappropriate to attribute liability to a party that may have little to no nexus with the emergency communication being attempted.²⁵

Some steps already have been taken to protect wireless providers from liability in connection with the provision of E911 using emerging technologies. In the NET 911 Improvement Act, a "wireless carrier, IP-enabled voice service provider, or other emergency communications provider" may receive the same liability protection as a local exchange carrier

Further Notice at \P 71.

²⁵ Comments of CTIA – The Wireless Association®, PS Docket 10-255, at 11-12 (Feb. 28, 2011).

under state law.²⁶ While the NET 911 Improvement Act's protections represent an important step toward ensuring protection for wireless carriers, CTIA once again urges the Commission to examine the scope of liability protections afforded under current law, to identify the limits of this protection, and to ensure that the full range of technologies and service providers involved in the provision of E911 (as well as NG911) is encompassed.

Further, as CTIA has observed in previous proceedings, there is significant variation among the states' laws in terms of the duties of care and potential liabilities imposed on 9-1-1 activities.²⁷ CTIA supports the updating of state laws in ways that provide sufficient liability protection in conjunction with new and emerging 9-1-1 services and technologies. Such robust and uniform liability protection has received overwhelming support in the Commission's NG911 proceeding, from industry and Public Safety commenters alike.²⁸ While CTIA stresses the importance of uniform liability protection in connection with the provision of E911 services, CTIA also notes that, given the constantly-evolving technologies involved, it is critical that

²⁶ See 47 U.S.C. § 615a.

See, e.g., Comments of CTIA—The Wireless Association[®], PS Docket No. 08-51 at 10-11 (filed June 30, 2008).

See, e.g. Comments of Motorola Solutions, Inc., PS Docket No. 10-255 at 12-13 (Feb. 28, 2011) ("National consistency in liability protection will be essential to encouraging investment and promoting a smooth NG911 transition."); Comments of the Association of Public-Safety Communications Officials International, Inc., PS Docket No. 10-255 at 9 (Feb. 28, 2011) (stating that liability issues are legitimate and valid concerns); Comments of AT&T Inc., PS Docket No. 10-255, at 25-26 (Feb. 28, 2011) (expressing support for "full liability protection to all originating network providers"); Comments of Sprint Nextel Corporation, PS Docket No. 10-255, at 8 (Feb. 28, 2011) (stating that existing liability protections "need to be expanded to extend to all forms of data included as part of NG911" and that wireless providers would need protection from liability for "communications originated by third party providers"); Comments of the Telecommunications Industry Association, PS Docket No. 10-255, at 6-7 (Feb. 28, 2011) (supporting liability protection for "all forms of information pushed to a PSAP or pulled from external sources by a PSAP regardless of the platform over which information travels"); Comments of the National Emergency Numbering Association, PS Docket No. 10-255 21 (Feb. 28, 2011) (observing that without robust liability protection for equipment manufacturers, database suppliers and application developers, NG911's ability to take advantage of auxiliary data will be limited).

liability protection regimes adopted are flexible enough to ensure that relevant parties will remain protected through the introduction of new technologies and services.

VI. THE COMMISSION'S PROPOSAL TO DEVELOP OPERATIONAL BENCHMARKS REGARDING CARRIERS' PROVISION OF LOCATION INFORMATION FOR CONSUMER USE IS IMPRACTICAL.

The Commission has requested comment on the adoption of operational benchmarks to assist consumers in evaluating carriers' location-based service capabilities and noted its interest in the CSRIC inquiring into whether such benchmarks are feasible or appropriate. As CTIA has enumerated in several previous proceedings, the wireless ecosystem is a dynamic, mobile environment that is not well-suited to regulatory "benchmarks" where operational data must be standardized and provided in a way that is understandable to the public. For example, CTIA has previously noted how the wireless environment is constantly changing at any given time due to changes in network capacity, demand for network resources, signal quality and environmental factors. Further, an end user's wireless experience may vary greatly depending on the end user device used. These variations have been acknowledged by the Commission. The impact of all these variations and limitations is that it is difficult for wireless carriers to provide detailed performance data to end users that are up-to-date and simple for consumers to understand.

Further Notice at \P 79.

Comments of CTIA – The Wireless Association®, CG Docket No. 09-158, at 15 (July 8, 2010) ("CTIA Broadband Speed Comments").

³¹ *Id.*

[&]quot;The Broadband Availability Gap," Omnibus Broadband Initiative Technical Paper 1, FCC, at 66, available at Appendix to *In the Matter of Connect America Fund A National Broadband Plan for Our Future High-Cost Universal Service Support*, Notice of Inquiry and Notice of Proposed Rulemaking, FCC 10-58 (rel. Apr. 21, 2010) (describing the factors unique to wireless networks that "lead to a heterogeneity of user experience").

While wireless networks are by their nature highly dynamic even under normal conditions, there are other unpredictable factors that would limit wireless carriers' ability to provide meaningful performance benchmarks. For example, one cannot ignore the distorting effects that certain factors, such as the self-help use of third party signal boosters, can have on the effectiveness of E911 location accuracy. In other proceedings, the record illustrated the considerable harm these boosters can have on wireless networks and end users, particularly in the context of E911 location accuracy.³³ These third party signal boosters can compromise E911 location accuracy not only for the end user who purchased the booster, but also for mobiles in the vicinity of the booster. The signal booster example is just one illustration of the way unpredictable factors can dramatically impact E911 location accuracy. As such, CTIA believes that it would be impractical for the Commission to develop operational benchmarks regarding carriers' provision of E911 location information. Further, given their different states of readiness for receiving and utilizing location data, PSAPs are not uniformly equipped to ensure consistent experiences throughout the country that broadband providers can reliably pass on to consumers.

Wireless broadband providers compete on the performance of their networks, and are therefore committed to providing current and potential subscribers with useful information regarding network performance. However, in the context of E911 location accuracy, there remain numerous obstacles to the provision of operational benchmarks, both due to the inherent nature of wireless networks and the varying conditions of PSAPs across the country. CTIA

See, e.g., Comments of AT&T Inc., PS Docket No. 07-114, at 15 (Jan. 19, 2011) ("In discussions with AT&T's E911 technology vendor, AT&T has determined that handsets operating with signal boosters transmit inaccurate timing information to [Location Measurement Units] relative to the original handset signal. The LMUs are extremely sensitive and will often pick up both the boosted signal as well as the original handset signal, which will cause inaccurate location estimates that can be skewed by as much as thousands of meters.");

supports the CSRIC's efforts in evaluating potential benchmarks, but believes that action by the Commission is not warranted at this time.

VII. CONCLUSION

innovative new products and services.

CTIA and its members have been actively engaged in efforts to improve E911 location accuracy. CTIA believes that the best course for the Commission to follow at this time is to promote the adoption of industry-led standards and best practices, and to support liability protection for entities involved in the provision of E911 services. In so doing, the Commission will promote a framework that protects consumers while preserving flexibility to develop

Respectfully submitted,

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